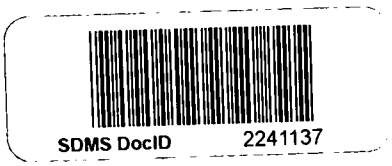
COMPUCHEM
a division of Liberty Analytical Corp.

ORIGINAL



February 24, 2000

(b) (4)
WESTON
5 Underwood Court
Delran, NJ 08075-1229

Subject: Report of Data – Project: 0002-L02 Quote #: Q1141 SDG #: R1141

Attn.: Marian Murphy

Enclosed are the results of analytical work performed in accordance with the referenced account number.

This report covers sample(s) appearing on the attached listing.

Thank you for selecting CompuChem Environmental for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097.

Sincerely,

(b) (4)

A Division of Liberty Analytical

Attachment

ORIGINAL

SAMPLENUM	CLIENTID	CASE	SDG	MATRIX	ACCTNUM	PROJECTNUM	RECEIVEDATE
R1141-4	BG-04	Q1141	R1141	SO	WESTON	0002-L02	02/15/00
R1141-1	SS-34	Q1141	R1141	SO	WESTON	0002-L02	02/15/00
R1141-2	SS-35	Q1141	R1141	SO	WESTON	0002-L02	02/15/00
R1141-3	SS-36	Q1141	R1141	SO	WESTON	0002-L02	02/15/00
R1141-5	SS-37	Q1141	R1141	SO	WESTON	0002-L02	02/15/00

ORIGINAL

The sample data summary package shall contain data for all samples in one Sample Delivery Group (SDG) of the Case, as follows:

A. SDG Narrative

B. Tabulated target compound results (Form I)
Tentatively identified compounds (Form I, TIC) (VOA & SV only)
In order by fraction (VOA, SV, PEST) and by sample within each fraction.

C. System monitoring compound results (Form II - VOA only)
Surrogate spike analysis results (Form II - SV & PEST only)
By fraction (VOA, SV, PEST), matrix (Water or Soil), and by concentration (Low or Medium)

D. Matrix Spike / Matrix Spike Duplicate results (Form III)
By fraction (VOA, SV, PEST)

E. Blank data (Form IV)
Tabulated blank results (Form I)
Tentatively identified compounds (Form I, TIC)
By fraction (VOA, SV, PEST)

F. Internal standard area response and retention time data (Form VIII)
By fraction (VOA & SV only)

LAB CODE : LIBRTY

CONTRACT # : ~~68W99071~~ 68553002 SMW 2-23-00

CASE # : _____

SDG # : R1141

ORIGINAL

A. SDG Narrative

ORIGINAL

CompuChem
a division of Liberty Analytical Corp.
501 Madison Avenue
Cary, North Carolina 27513

SDG NARRATIVE

SDG: R1141
CONTRACT: 68S53002

SAMPLE IDENTIFICATIONS: BG-04, SS-34, SS-35, SS-36, SS-37

This portion of the SDG narrative covers only the pesticide fractions of the five (5) samples listed above. For receiving information pertaining to these samples, please refer to the portion of the SDG narrative that covers the semivolatile fractions.

PESTICIDE/PCB

Extraction and analysis holding time requirements were met for all of these samples. The pesticide Target Compound List (TCL) analyte beta-BHC was confirmed by dual column analysis at a concentration above the Contract Required Quantitation Limit (CRQL) in BG-04. SS-34 contained the pesticide TCL analyte gamma-chlordane at a concentration above the CRQL. The pesticide TCL analytes endrin and 4,4'-DDT were confirmed by dual column analysis at a concentration above the CRQL in SS-35. The PCB TCL analyte Aroclor 1260 was confirmed by dual column analysis at a concentration above the CRQL in SS-35.

All of the surrogates met recovery criteria with two exceptions. The recovery of decachlorobiphenyl (DCB) fell above the quality control criteria limit on both columns in the analysis of BG-04 due to matrix interference. All of the surrogates met retention time criteria in the analyses of samples.

The associated method blank met all quality control criteria. The method blank contained concentrations of a few pesticide TCL analytes which were within acceptance limits. No PCB TCL analytes were confirmed in the method blank.

SS-34 was used as the original to prepare the duplicate matrix spikes. The associated duplicate matrix spikes met all advisory accuracy and precision criteria.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions listed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

(b) (4) [redacted]

Technical Reviewer
February 22, 2000

ORIGINAL

CompuChem

a division of Liberty Analytical Corporation

DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1.0 is assumed for the TIC analyte.

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide/Aroclor or other GC or HPLC identification criteria, and the result is less than the CRQL but greater than zero. For example, if the sample quantitation limit is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search. For generic characterization of a TIC such as 'chlorinated hydrocarbon', the N flag is not used.

P : This flag is used for a pesticide/Aroclor target analyte, and other GC or HPLC analytes, when there is greater than 25% difference for detected concentrations between the two GC or HPLC columns. The lower of the two values is reported on Form I and flagged with a P.

C : This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

DATA REPORTING QUALIFIERS (continued)

B: This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E: This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a response greater than the upper level of the calibration range will have the concentration flagged with an E on Form I for the original analysis.

D: If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on Form I for the more diluted sample, and all reported concentrations on that Form I are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL and the U flag.

NOTE 2: Separate Form Is are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses are not combined on a single Form I.

A: This flag indicates that a TIC is a suspected aldol-condensation product.

X/Y/Z: Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y and Z.

B. Form I and Form I - TIC

ORIGINAL

Organic Analysis Data Sheet (OADS) and Tentatively Identified Compounds (TICs)

- All samples by fraction (VOA, SV, PEST)
  - alphanumeric order within each fraction

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ORIGINAL

BG-04

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

Matrix: (soil/water) SOIL Lab Sample ID: R1141-4

Sample wt/vol: 30.0(g/mL) G Lab File ID: _____

% Moisture: 18 Decanted: (Y/N) N Date Received: 02/15/00

Extraction: (Type) SONC Date Extracted: 02/15/00

Concentrated Extract Volume: 5000(uL) Date Analyzed: 02/18/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 3.7 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	2.1	U
319-85-7	beta-BHC	7.4	BP
319-86-8	delta-BHC	0.50	JB
58-89-9	gamma-BHC (Lindane)	2.1	U
76-44-8	Heptachlor	2.1	U
309-00-2	Aldrin	2.1	U
1024-57-3	Heptachlor epoxide	0.49	JP
959-98-8	Endosulfan I	2.1	U
60-57-1	Dieldrin	4.0	U
72-55-9	4,4'-DDE	0.39	JP
72-20-8	Endrin	1.4	JP
33213-65-9	Endosulfan II	4.0	U
72-54-8	4,4'-DDD	4.0	U
1031-07-8	Endosulfan sulfate	0.59	JBP
50-29-3	4,4'-DDT	1.4	JP
72-43-5	Methoxychlor	2.1	JBP
53494-70-5	Endrin ketone	4.0	U
7421-93-4	Endrin aldehyde	4.0	U
5103-71-9	alpha-Chlordane	2.1	U
5103-74-2	gamma-Chlordane	2.1	U
8001-35-2	Toxaphene	210	U
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	82	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	40	U
11096-82-5	Aroclor-1260	40	U

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ORIGINAL

SS-34 ✓

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

Matrix: (soil/water) SOIL Lab Sample ID: R1141-1

Sample wt/vol: 30.0(g/mL) G Lab File ID: _____

% Moisture: 30 Decanted: (Y/N) N Date Received: 02/15/00

Extraction: (Type) SONC Date Extracted: 02/15/00

Concentrated Extract Volume: 5000(uL) Date Analyzed: 02/18/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.4	U
319-85-7	beta-BHC	2.4	U
319-86-8	delta-BHC	2.4	U
58-89-9	gamma-BHC (Lindane)	2.4	U
76-44-8	Heptachlor	0.35	JBP
309-00-2	Aldrin	2.4	U
1024-57-3	Heptachlor epoxide	2.4	U
959-98-8	Endosulfan I	2.4	U
60-57-1	Dieldrin	4.7	U
72-55-9	4,4'-DDE	4.7	U
72-20-8	Endrin	4.4	JB
33213-65-9	Endosulfan II	4.7	U
72-54-8	4,4'-DDD	4.7	U
1031-07-8	Endosulfan sulfate	4.7	U
50-29-3	4,4'-DDT	1.1	JP
72-43-5	Methoxychlor	4.6	JBP
53494-70-5	Endrin ketone	4.7	U
7421-93-4	Endrin aldehyde	4.7	U
5103-71-9	alpha-Chlordane	2.4	U
5103-74-2	gamma-Chlordane	3.9	P
8001-35-2	Toxaphene	240	U
12674-11-2	Aroclor-1016	47	U
11104-28-2	Aroclor-1221	96	U
11141-16-5	Aroclor-1232	47	U
53469-21-9	Aroclor-1242	47	U
12672-29-6	Aroclor-1248	47	U
11097-69-1	Aroclor-1254	47	U
11096-82-5	Aroclor-1260	19	J

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ORIGINAL

SS-35

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

Matrix: (soil/water) SOIL Lab Sample ID: R1141-2

Sample wt/vol: 30.0(g/mL) G Lab File ID: _____

% Moisture: 23 Decanted: (Y/N) N Date Received: 02/15/00

Extraction: (Type) SONC Date Extracted: 02/15/00

Concentrated Extract Volume: 5000(uL) Date Analyzed: 02/18/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	0.41	JBP
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	2.2	U
959-98-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	1.2	JBP
72-55-9	4,4'-DDE	1.3	JP
72-20-8	Endrin	4.4	P
33213-65-9	Endosulfan II	4.3	U
72-54-8	4,4'-DDD	1.7	J
1031-07-8	Endosulfan sulfate	4.3	U
50-29-3	4,4'-DDT	5.9	P
72-43-5	Methoxychlor	5.8	JB
53494-70-5	Endrin ketone	4.3	U
7421-93-4	Endrin aldehyde	4.3	U
5103-71-9	alpha-Chlordane	2.2	U
5103-74-2	gamma-Chlordane	2.2	U
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	43	U
11104-28-2	Aroclor-1221	87	U
11141-16-5	Aroclor-1232	43	U
53469-21-9	Aroclor-1242	43	U
12672-29-6	Aroclor-1248	43	U
11097-69-1	Aroclor-1254	43	U
11096-82-5	Aroclor-1260	53	

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ORIGINAL

SS-36

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

Matrix: (soil/water) SOIL Lab Sample ID: R1141-3

Sample wt/vol: 30.0(g/mL) G Lab File ID: _____

% Moisture: 24 Decanted: (Y/N) N Date Received: 02/15/00

Extraction: (Type) SONC Date Extracted: 02/15/00

Concentrated Extract Volume: 5000(uL) Date Analyzed: 02/18/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	0.36	JP
76-44-8	Heptachlor	0.31	JBP
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	2.2	U
959-98-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	0.30	JBP
72-55-9	4,4'-DDE	4.3	U
72-20-8	Endrin	4.3	U
33213-65-9	Endosulfan II	4.3	U
72-54-8	4,4'-DDD	4.3	U
1031-07-8	Endosulfan sulfate	0.31	JP
50-29-3	4,4'-DDT	4.3	U
72-43-5	Methoxychlor	1.5	JP
53494-70-5	Endrin ketone	4.3	U
7421-93-4	Endrin aldehyde	4.3	U
5103-71-9	alpha-Chlordane	2.2	U
5103-74-2	gamma-Chlordane	0.33	JP
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	43	U
11104-28-2	Aroclor-1221	88	U
11141-16-5	Aroclor-1232	43	U
53469-21-9	Aroclor-1242	43	U
12672-29-6	Aroclor-1248	43	U
11097-69-1	Aroclor-1254	43	U
11096-82-5	Aroclor-1260	43	U

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ORIGINAL

SS-37

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

Matrix: (soil/water) SOIL Lab Sample ID: R1141-5

Sample wt/vol: 30.0(g/mL) G Lab File ID: _____

% Moisture: 20 Decanted: (Y/N) N Date Received: 02/15/00

Extraction: (Type) SONC Date Extracted: 02/15/00

Concentrated Extract Volume: 5000(uL) Date Analyzed: 02/18/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.1	U
319-85-7	beta-BHC	1.2	JBP
319-86-8	delta-BHC	2.1	U
58-89-9	gamma-BHC (Lindane)	2.1	U
76-44-8	Heptachlor	2.1	U
309-00-2	Aldrin	2.1	U
1024-57-3	Heptachlor epoxide	2.1	U
959-98-8	Endosulfan I	2.1	U
60-57-1	Dieldrin	4.1	U
72-55-9	4,4'-DDE	1.1	J
72-20-8	Endrin	1.6	JP
33213-65-9	Endosulfan II	4.1	U
72-54-8	4,4'-DDD	1.0	JP
1031-07-8	Endosulfan sulfate	4.1	U
50-29-3	4,4'-DDT	1.7	JP
72-43-5	Methoxychlor	2.7	J
53494-70-5	Endrin ketone	4.1	U
7421-93-4	Endrin aldehyde	4.1	U
5103-71-9	alpha-Chlordane	2.1	U
5103-74-2	gamma-Chlordane	0.75	JP
8001-35-2	Toxaphene	210	U
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	84	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	38	J

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ORIGINAL

SS-34MS

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

Matrix: (soil/water) SOIL Lab Sample ID: WG1498-3

Sample wt/vol: 30.0(g/mL) G Lab File ID: _____

% Moisture: 30 Decanted: (Y/N) N Date Received: 02/15/00

Extraction: (Type) SONC Date Extracted: 02/15/00

Concentrated Extract Volume: 5000(uL) Date Analyzed: 02/18/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.4	U
319-85-7	beta-BHC	2.4	U
319-86-8	delta-BHC	2.4	U
58-89-9	gamma-BHC (Lindane)	21	P
76-44-8	Heptachlor	21	B
309-00-2	Aldrin	22	B
1024-57-3	Heptachlor epoxide	2.4	U
959-98-8	Endosulfan I	2.4	U
60-57-1	Dieldrin	46	B
72-55-9	4,4'-DDE	4.7	U
72-20-8	Endrin	52	B
33213-65-9	Endosulfan II	4.7	U
72-54-8	4,4'-DDD	4.7	U
1031-07-8	Endosulfan sulfate	0.95	JP
50-29-3	4,4'-DDT	44	B
72-43-5	Methoxychlor	2.8	JBP
53494-70-5	Endrin ketone	4.7	U
7421-93-4	Endrin aldehyde	4.7	U
5103-71-9	alpha-Chlordane	2.4	U
5103-74-2	gamma-Chlordane	4.1	P
8001-35-2	Toxaphene	240	U
12674-11-2	Aroclor-1016	47	U
11104-28-2	Aroclor-1221	96	U
11141-16-5	Aroclor-1232	47	U
53469-21-9	Aroclor-1242	47	U
12672-29-6	Aroclor-1248	47	U
11097-69-1	Aroclor-1254	47	U
11096-82-5	Aroclor-1260	47	U

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ORIGINAL

SS-34MS

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

Matrix: (soil/water) SOIL Lab Sample ID: WG1498-4

Sample wt/vol: 30.0(g/mL) G Lab File ID: _____

% Moisture: 30 Decanted: (Y/N) N Date Received: 02/15/00

Extraction: (Type) SONC Date Extracted: 02/15/00

Concentrated Extract Volume: 5000(uL) Date Analyzed: 02/18/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.4	U
319-85-7	beta-BHC	2.4	U
319-86-8	delta-BHC	2.4	U
58-89-9	gamma-BHC (Lindane)	21	
76-44-8	Heptachlor	19	B
309-00-2	Aldrin	21	B
1024-57-3	Heptachlor epoxide	2.4	U
959-98-8	Endosulfan I	2.4	U
60-57-1	Dieldrin	42	BP
72-55-9	4,4'-DDE	4.7	U
72-20-8	Endrin	50	B
33213-65-9	Endosulfan II	4.7	U
72-54-8	4,4'-DDD	4.7	U
1031-07-8	Endosulfan sulfate	0.72	JP
50-29-3	4,4'-DDT	42	B
72-43-5	Methoxychlor	3.2	J
53494-70-5	Endrin ketone	4.7	U
7421-93-4	Endrin aldehyde	4.7	U
5103-71-9	alpha-Chlordane	2.4	U
5103-74-2	gamma-Chlordane	3.7	P
8001-35-2	Toxaphene	240	U
12674-11-2	Aroclor-1016	47	U
11104-28-2	Aroclor-1221	96	U
11141-16-5	Aroclor-1232	47	U
53469-21-9	Aroclor-1242	47	U
12672-29-6	Aroclor-1248	47	U
11097-69-1	Aroclor-1254	47	U
11096-82-5	Aroclor-1260	47	U

C. Form II

System Monitoring Compound summary (VOA) and Surrogate spike analysis (SV & PEST)

- By fraction (VOA, SV, PEST) -
- By level (low, medium) -

2F

SOIL PESTICIDE SURROGATE RECOVERY

ORIGINAL

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

GC Column(1): CLPEST ID: 0.53(mm) GC Column(2): CLPEST2 ID:0.53 (mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLKJO	98	99	103	100			0
02	SS-34	96	121	126	133			0
03	SS-35	99	114	148	129			0
04	SS-36	102	113	131	116			0
05	BG-04	99	112	186*	212*			2
06	SS-37	107	119	127	122			0
07	SS-34MS	92	103	115	113			0
08	SS-34MSD	95	128	105	108			0
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

QC LIMITS

TCX = Tetrachloro-m-xylene (30-150)
DCB = Decachlorobiphenyl (30-150)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

D. Form III

Matrix Spike/Matrix Spike Duplicate results

- By fraction (VOA, SV, PEST) -

- By level (low, medium) -

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

ORIGINAL

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

Matrix Spike - EPA Sample No.: SS-34

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMIT. REC.
gamma-BHC (Lindane)	24	0.0	21	88	46-12
Heptachlor	24	0.35	21	86	35-13
Aldrin	24	0.0	22	92	34-13
Dieldrin	48	0.0	46	96	31-13
Endrin	48	4.4	52	99	42-13
4,4'-DDT	48	1.1	44	89	23-13

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	24	21	88	0	50	46-12
Heptachlor	24	19	78	10	31	35-13
Aldrin	24	21	88	4	43	34-13
Dieldrin	48	42	88	9	38	31-13
Endrin	48	50	95	4	45	42-13
4,4'-DDT	48	42	85	5	50	23-13

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS: _____

E. Form IV

Method Blank Results

Form IV, Form I, and Form I - TIC

Method blank summary, OADS, and TICs

- All blanks by fraction (VOA, SV, PEST) -

- By analysis date & time within each fraction -

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

ORIGINAL

PBLKJO

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

Lab Sample ID: WG1498-1 Lab File ID: _____

Matrix (soil/water) SOIL Extraction:(Type) SONC

Sulfur Cleanup (Y/N) N Date Extracted: 02/15/00

Date Analyzed (1): 02/18/00 Date Analyzed (2): 02/18/00

Time Analyzed (1): 1130 Time Analyzed (2): 1130

Instrument ID (1): TRACEGC80 Instrument ID (2): TRACEGC81

GC Column (1): CLPEST ID: 0.53(mm) GC Column (2): CLPEST2 ID: 0.53(m

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	SS-34	R1141-1	02/18/00	02/18/00
02	SS-35	R1141-2	02/18/00	02/18/00
03	SS-36	R1141-3	02/18/00	02/18/00
04	BG-04	R1141-4	02/18/00	02/18/00
05	SS-37	R1141-5	02/18/00	02/18/00
06	SS-34MS	WG1498-3	02/18/00	02/18/00
07	SS-34MSD	WG1498-4	02/18/00	02/18/00
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ORIGINAL

PBLKJO

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

Matrix: (soil/water) SOIL Lab Sample ID: WG1498-1

Sample wt/vol: 30.0(g/mL) G Lab File ID: _____

% Moisture: 0 Decanted: (Y/N) N Date Received: _____

Extraction: (Type) SONC Date Extracted: 02/15/00

Concentrated Extract Volume: 5000(uL) Date Analyzed: 02/18/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	0.46	JP
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	0.19	JP
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.3	U
7421-93-4	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

ORIGINAL

The sample data package shall include data for all analyses of all samples in one Sample Delivery Group (SDG), including field samples, dilutions, reanalyses, blanks, matrix spikes, and matrix spike duplicates. The sample data package consists of the following:

A. SDG Narrative

B. Traffic Reports

C. Volatile Data

D. Semivolatile Data

E. Pesticide / Aroclor Data

LAB CODE : LIBRTY

CONTRACT # : ~~68W99070~~ 68553002 SMO 2-23-05

CASE # : _____

SDG # : R1141

A. SDG Narrative

ORIGINAL

CompuChem
a division of Liberty Analytical Corp.
501 Madison Avenue
Cary, North Carolina 27513

SDG NARRATIVE

SDG: R1141
CONTRACT: 68S53002

SAMPLE IDENTIFICATIONS: BG-04, SS-34, SS-35, SS-36, SS-37

This portion of the SDG narrative covers only the pesticide fractions of the five (5) samples listed above. For receiving information pertaining to these samples, please refer to the portion of the SDG narrative that covers the semivolatile fractions..

PESTICIDE/PCB

Extraction and analysis holding time requirements were met for all of these samples. The pesticide Target Compound List (TCL) analyte beta-BHC was confirmed by dual column analysis at a concentration above the Contract Required Quantitation Limit (CRQL) in BG-04. SS-34 contained the pesticide TCL analyte gamma-chlordane at a concentration above the CRQL. The pesticide TCL analytes endrin and 4,4'-DDT were confirmed by dual column analysis at a concentration above the CRQL in SS-35. The PCB TCL analyte Aroclor 1260 was confirmed by dual column analysis at a concentration above the CRQL in SS-35.

All of the surrogates met recovery criteria with two exceptions. The recovery of decachloro-biphenyl (DCB) fell above the quality control criteria limit on both columns in the analysis of BG-04 due to matrix interference. All of the surrogates met retention time criteria in the analyses of samples.

The associated method blank met all quality control criteria. The method blank contained concentrations of a few pesticide TCL analytes which were within acceptance limits. No PCB TCL analytes were confirmed in the method blank.

SS-34 was used as the original to prepare the duplicate matrix spikes. The associated duplicate matrix spikes met all advisory accuracy and precision criteria.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions listed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

(b) (4) [redacted]

Technical Reviewer
February 22, 2000

DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each compound. The qualifiers used are:

U: This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J: This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1.0 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide/Aroclor or other GC or HPLC identification criteria, and the result is less than the CRQL but greater than zero. For example, if the sample quantitation limit is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N: This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search. For generic characterization of a TIC such as 'chlorinated hydrocarbon', the N flag is not used.

P: This flag is used for a pesticide/Aroclor target analyte, and other GC or HPLC analytes, when there is greater than 25% difference for detected concentrations between the two GC or HPLC columns. The lower of the two values is reported on Form I and flagged with a P.

C: This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

DATA REPORTING QUALIFIERS (continued)

B: This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E: This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a response greater than the upper level of the calibration range will have the concentration flagged with an E on Form I for the original analysis.

D: If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on Form I for the more diluted sample, and all reported concentrations on that Form I are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL and the U flag.

NOTE 2: Separate Form Is are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses are not combined on a single Form I.

A: This flag indicates that a TIC is a suspected aldol-condensation product.

X/Y/Z: Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y and Z.

B. Traffic Reports

The contractor shall include a copy of the Traffic Reports (TRs) and Chain-of-Custodies (CoCs) for all of the samples in the SDG. The TRs shall be arranged in increasing EPA sample number order, considering both letters and numbers.

In any instance where samples from more than one multi-sample TR are in the same data package, the Contractor shall submit a copy of the SDG cover sheet with white copies of the TRs.

Work Group Report (wk02)

15-FEB-00 11:59 AM

ORIGINAL

Work Group: WG1498
Department: 310 ORGANIC EXTRACTIONS

Created: 15-FEB-00

Sample	Client ID	Product	Matrix	RecvDate	Bottle#	Lab Information
R1141-1	SS-34	PEST-PCB-LL-OLM04.2	Soil	15-FEB-00		
R1141-2	SS-35	PEST-PCB-LL-OLM04.2	Soil	15-FEB-00		
R1141-3	SS-36	PEST-PCB-LL-OLM04.2	Soil	15-FEB-00		
R1141-4	BG-04	PEST-PCB-LL-OLM04.2	Soil	15-FEB-00		
R1141-5	SS-37	PEST-PCB-LL-OLM04.2	Soil	15-FEB-00		
WG1498-1	PBLKJO	PEST-PCB-LL-OLM04.2	Soil	15-FEB-00		
WG1498-2	PJOLCS	PEST-PCB-LL-OLM04.2	Soil	15-FEB-00		
WG1498-3	Matrix Spike	PEST-PCB-LL-OLM04.2	Soil	15-FEB-00		
WG1498-4	Matrix Spike Duplica	PEST-PCB-LL-OLM04.2	Soil	15-FEB-00		

Comments:

R1141-1	PPS754/TCL SVOAs&PEST/PCBs(OLM03.2)/TAL METALS(ILM04.0)/PICK QC
R1141-2	PPS754/TCL SVOAs&PEST/PCBs(OLM03.2)/TAL METALS(ILM04.0)/PICK QC
R1141-3	PPS754/TCL SVOAs&PEST/PCBs(OLM03.2)/TAL METALS(ILM04.0)/PICK QC
R1141-4	PPS754/TCL SVOAs&PEST/PCBs(OLM03.2)/TAL METALS(ILM04.0)/PICK QC
R1141-5	PPS754/TCL SVOAs&PEST/PCBs(OLM03.2)/TAL METALS(ILM04.0)/PICK QC/SDG CLOSED

Internal Chain of Custody

Relinquished By	Date	Received By	Date	Reason
AKG	2/17	GC Table	2/17	Toxic Storage
GC Table	2/17/00	Je	2/17/00	Begin Screening
Je	2/17/00	Fridge #2	2/17/00	Storage
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

EXTRACTS

Batch # 2-17-1

ORIGINAL

E. Pesticide/Aroclor Data

1. Q C Summary

2. Sample Data

3. Standards Data

4. Raw Q C Data

LAB CODE : LIBRTY

CONTRACT # : ~~68W99070~~ 68553002 SMW 2-22-00

CASE # : _____

SDG # : R1141

ORIGINAL

1. Q C Summary

a. Surrogate Percent Recovery Summary (Form II PEST)

b. Matrix Spike/Matrix Spike Duplicate Summary
(Form III PEST)

c. Method Blank Summary (Form IV PEST)

a. Surrogate Percent Recovery Summary

(Form II PEST)

ORIGINAL

2F

SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

GC Column(1): CLPEST ID: 0.53(mm) GC Column(2): CLPEST2 ID:0.53 (mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLKJO	98	99	103	100			0
02	SS-34	96	121	126	133			0
03	SS-35	99	114	148	129			0
04	SS-36	102	113	131	116			0
05	BG-04	99	112	186*	212*			2
06	SS-37	107	119	127	122			0
07	SS-34MS	92	103	115	113			0
08	SS-34MSD	95	128	105	108			0
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

QC LIMITS

TCX = Tetrachloro-m-xylene (30-150)
DCB = Decachlorobiphenyl (30-150)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

b. Matrix Spike/Matrix Spike Duplicate Summary (Form III PEST)

ORIGINAL

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

Matrix Spike - EPA Sample No.: SS-34

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
gamma-BHC (Lindane)	24	0.0	21	88	46-12
Heptachlor	24	0.35	21	86	35-13
Aldrin	24	0.0	22	92	34-13
Dieldrin	48	0.0	46	96	31-13
Endrin	48	4.4	52	99	42-13
4,4'-DDT	48	1.1	44	89	23-13

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	24	21	88	0	50	46-12
Heptachlor	24	19	78	10	31	35-13
Aldrin	24	21	88	4	43	34-13
Dieldrin	48	42	88	9	38	31-13
Endrin	48	50	95	4	45	42-13
4,4'-DDT	48	42	85	5	50	23-13

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS: _____

c. Method Blank Summary (Form IV PEST)

If more than a single form is necessary, forms shall be arranged in chronological order by date of analysis of the blanks, and by instrument.

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

ORIGINAL

PBLKJO

Lab Name: COMPUCHEM Contract: 68S53002

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1141

Lab Sample ID: WG1498-1 Lab File ID: _____

Matrix (soil/water) SOIL Extraction:(Type) SONC

Sulfur Cleanup (Y/N) N Date Extracted: 02/15/00

Date Analyzed (1): 02/18/00 Date Analyzed (2): 02/18/00

Time Analyzed (1): 1130 Time Analyzed (2): 1130

Instrument ID (1): TRACEGC80 Instrument ID (2): TRACEGC81

GC Column (1): CLPEST ID: 0.53(mm) GC Column (2): CLPEST2 ID: 0.53(m

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	SS-34	R1141-1	02/18/00	02/18/00
02	SS-35	R1141-2	02/18/00	02/18/00
03	SS-36	R1141-3	02/18/00	02/18/00
04	BG-04	R1141-4	02/18/00	02/18/00
05	SS-37	R1141-5	02/18/00	02/18/00
06	SS-34MS	WG1498-3	02/18/00	02/18/00
07	SS-34MSD	WG1498-4	02/18/00	02/18/00
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____